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Research Aid

USSR: Hard Currency Trade and Payments, 1977-78

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**USSR: Hard Currency
Trade and Payments¹
1977-78**

The USSR incurred a hard currency trade deficit of US \$6.4 billion in 1975 because of its need to import massive amounts of Western grain at a time when Western recession had depressed Soviet export earnings. Moscow's reaction to these unexpected events was to borrow heavily, largely on the short term, from the West. In 1975 alone, Soviet net liabilities to Western commercial banks rose by \$4.0 billion.

By resorting to heavy borrowing rather than cutting back on nongrain imports and/or selling more gold, the Soviets soon found themselves overextended. Cognizant of this problem, Moscow took several steps in 1976 designed to reduce both the size of its trade deficit and its need to rely on Western bankers for balance-of-payments financing. It reduced nongrain imports, increased gold sales (despite falling prices for most of the year), and minimized cash outlays, including deferment of some payments until 1977. Despite these moves, continuing heavy imports of grain caused a hard currency trade deficit of nearly \$5 billion last year. In addition, net Soviet debt to Western commercial bankers rose by another \$2 billion despite Moscow's attempts to minimize such borrowing.

When planning foreign trade and payments for 1977-78 the USSR will have to continue the cautious approach instituted in 1976. Debt service continues to grow steadily as a result of heavy past borrowing, while Moscow's ability to obtain substantial, additional credit from Western banks will continue to be constrained.

Nevertheless, Soviet prospects appear favorable for 1977; even without tapping the Eurocurrency market for short-term financing the USSR should increase nongrain imports by up to 24 percent over their 1976 levels.

1. This research aid deals with Soviet convertible or hard currency trade, which is solely with the West and constitutes one-third of total Soviet trade. The remaining Soviet trade is conducted under bilateral payments agreements with Communist countries and some less developed countries (LDCs).

March 1977

DISCUSSION

Introduction

1. The Soviet Tenth Five-Year Plan (1976-80) indicates a continued desire to obtain large quantities of Western technology and equipment, and Moscow will continue to rely on the West for grains to supplement domestic production. This memorandum analyzes the ability of the USSR to meet its hard currency import goals through 1978 by focusing on the likely growth of hard currency inflows -- from exports, gold and arms sales, and increased borrowing -- that will be available to cover import costs.

Deficit, 1975-76

2. The Soviet hard currency balance of trade deteriorated sharply in 1975-76; the 1975 trade deficit reached a record \$6.4 billion and the 1976 deficit probably was close to \$5 billion.² The USSR undoubtedly had programmed deficits in its hard currency trade for these years, but the magnitude of the trade imbalances was unexpected. They resulted from depressed Western economic demand for Soviet exports due to economic recession at a time when a disastrous domestic grain harvest in 1975 forced Moscow to import \$5.3 billion in grain in 1975-76.

3. The USSR covered its 1975 trade deficit by heavy borrowing (see Table 1). The Soviets benefited from an estimated \$3.5 billion in medium- and long-term credits, made available by Western governments and exporters, which were arranged in advance to cover imports of equipment and pipe. The USSR was forced, however, to borrow substantial amounts of funds from the Eurocurrency market to cover unanticipated shortfalls in hard currency earnings and to pay for the unexpectedly high level of grain imports.

4. We estimate that the Soviets obtained roughly \$3.6 billion in commercial loans, largely short-term, from Western banks in 1975; at the same time Soviet

2. Unless otherwise specified, Soviet foreign trade data presented in this paper are derived from official Soviet statistics (USSR Ministeratvo Vneshnei Torgovli, "Vneshnyaya Torgovlya SSSR za 1967 [1975] god"). Soviet and Western trade statistics provide substantially divergent views of Soviet hard currency trade deficits. Imports reported by the West generally exceed by a wide margin the value of exports reported by Moscow, while the value of Soviet imports according to official Soviet statistics has usually been quite a bit higher than the value reported by Western countries for their export to the USSR. A detailed examination of Soviet and various Western trade statistics and reporting practices provides the reasons for these differences and demonstrates conclusively that Soviet statistics are a more reliable guide to the USSR's hard currency trade position. This study will be published in the near future.

Table 1

USSR: Hard Currency Balance of Payments

	Million US \$		
	1974 ¹	1975 ¹	1976 ²
Merchandise trade balance ³	-911	-6,352	-4,900
Gold sales	800	1,000 ⁴	1,000
Interest payments	-237	-456	-821
Other invisibles and hard currency trade, n.e.s. ⁵	1,601	1,358	1,750
Current account balance	1,253	-4,450	-2,971
Medium- and long-term credits, net	820	3,028	2,188
Basic balance	2,073	-1,422	-783
Change in net Eurocurrency liabilities, n.e.s. ⁶	NA	3,171	2,000
Errors and omissions	-2,073	-1,749	-1,217

1. Revised.

2. Estimated.

3. Official Soviet foreign trade statistics.

4. Including rumored direct sales to the Middle East which may have earned some \$250 million.

5. Including estimated receipts from arms sales, known hard currency trade under clearing agreements, and net receipts from tourism and transportation.

6. Excluding known or estimated medium- and long-term Eurocurrency borrowing.

assets in Western banks were reduced by \$371 million. With earnings from gold, arms sales, transportation, and tourism totaling over \$2 billion, Moscow apparently had no need to tap Western banks so heavily. They may have decided, however, to take advantage of Western money market liquidity in expectation of heavy grain imports in 1976.

5. The strategy adopted by the USSR for managing its 1976 hard currency trade and payments was strongly influenced by events in 1975. Previously placed Soviet orders for grain, Western equipment, and steel products made a large 1976 balance-of-trade deficit a certainty. Moscow could count on large inflows of Western government backed credits; however, its ability to cover the remaining portion of the expected trade deficit by general purpose borrowing and gold sales was less certain. Heavy general purpose borrowing in 1975 had caused many major Western banks to approach or reach their lending limits vis-a-vis the Soviet Union. These banks in particular and the Western banking community in general were becoming far more selective in additional lending. Moscow in all likelihood realized that it

would be more difficult to obtain additional short-term credits and more costly to obtain Western participation in any future medium-term syndications. Prospects for gold sales were also rather poor. Western inflation and the expectation of gold sales by the International Monetary Fund (IMF) had substantially depressed world gold prices and, in turn, Soviet earning potential.

6. By the end of 1975, Moscow had apparently decided on the steps that were to guide hard currency trade and payments activities in 1976. A determined effort was made to minimize both the trade deficit per se and Soviet reliance on general purpose financing on the Euromarket. Specific goals apparently included

- a cutback on hard currency allocations previously granted to some Soviet ministries,
- an expansion of exports to the West,
- a tight control over foreign exchange outlays on the current account, including the postponement of some payments until 1977, and
- a reliance on gold sales despite lower market prices.

7. Based on official Soviet trade returns for the first 9 months, the USSR's 1976 hard currency trade deficit should be nearly \$5 billion. The drop in the deficit was due largely to Moscow's ability to restrain import growth. We estimate Soviet hard currency imports for 1976 at \$14.8 billion, up only 4 percent in value over last year. Nongrain imports, in fact, probably fell slightly in value and somewhat more in real terms. In contrast, the USSR enjoyed a rapid growth in its exports, which are expected to rise by 27 percent in value over 1975 to \$9.9 billion. Although the Soviets are known to have made a concerted effort to expand export sales, general economic recovery in the West was the major factor behind the rapid export growth.

8. In 1976, medium- and long-term supplier's credits, largely government backed, financed Soviet imports of equipment and pipe worth an estimated \$3.7 billion. Although Soviet credit drawings were at record levels, their net effect on Moscow's balance of payments fell because of rising debt service. After allowing for repayments of principal and interest on past debt, roughly \$1.4 billion remained to offset the \$4.9 billion trade deficit, leaving \$3.5 billion to be raised from other sources (see Appendix A).

9. The Soviets were understandably loath to return to Western commercial money markets for financial credits in 1976. Where government-backed credits were unavailable, the USSR opted for promissory note financing in lieu of cash contracts.³ Reportedly there has been a steady supply of 5-year fixed rate promissory notes being discounted on the European nonrecourse market, and some new equipment orders being placed in the United States are apparently being financed by this method.

10. Although remaining a heavy borrower on Western money markets, the USSR achieved its goal of substantially reducing its reliance on private credits in financing 1976's hard currency trade deficit. Although the \$3.4 billion hard currency trade deficit incurred in the first half of 1976 matched the January-June figure for 1975, net Soviet borrowings on Western private money markets in these comparable periods fell from \$2.9 billion to \$1.6 billion.

11. The USSR almost certainly would have preferred to refrain completely from seeking a general purpose Eurocurrency syndication in 1976; there is some indication that its decision to do so in April 1976 was unexpected. Market response to this syndication (\$250 million at 1.25 percent over the London Interbank Offered Rate - LIBOR) was very poor. Although money markets remained very liquid throughout 1976, the USSR, because of heavy past borrowing, probably would not have been able to obtain a second syndication at the rates it was willing to pay.

12. According to public statements by industry sources the USSR earned roughly \$1 billion from the sale of gold in the West in 1976. The Soviet commitment to gold as a foreign exchange earner was evidenced by the decision to continue sales despite deteriorating market conditions. During the first 6 months of the year the USSR is estimated to have sold roughly 120 tons of gold. Sales were reportedly curtailed late in June when the price dropped sharply, but heavy Soviet selling was apparently resumed in September once the price of gold had risen to \$120 per ounce.

3. Promissory note financing is a form of supplier credit whereby the Western exporter extends a loan to the USSR by accepting medium- or long-term obligations (promissory notes) from the Soviet importer in lieu of cash payments. In most cases these credit documents are for 5 years duration and carry a nominal interest rate in the range of 6.5-7.5 percent. The exporter, with full Soviet knowledge, will often raise the effective interest rate on the loan to roughly 10 percent by increasing the selling price of his exports. The Soviet promissory notes are subsequently discounted by the Western exporter with Western banks. As such, they constitute a marketable credit instrument that is often viewed by Western bankers as an alternative to direct lending to the USSR.

13. Soviet ability to finance its 1976 trade deficit was substantially enhanced by net hard currency receipts from invisibles and from arms sales. The growing size of the Soviet merchant marine fleet and increased revenues from the Siberian land bridge provided the USSR with a net hard currency inflow of \$450 million. Net revenues from tourism also rose, to some \$150 million. Finally, arms sales continued to provide substantial hard currency revenues; estimated receipts were in excess of \$1 billion.

Uncertainties Facing Moscow, 1977-78

14. The events of the last 2 years must have made Soviet officials somewhat uneasy about planning future trade with the West.

- Western recession demonstrated the vulnerability of Soviet export earnings to Western economic conditions; Moscow can no longer count on a planned level of export receipts, particularly when continued Western economic recovery remains questionable.
- Similarly, the gold market has fluctuated significantly in the past 2 years and Moscow cannot count with certainty on its future ability to market large amounts of gold at acceptable prices.
- The rapid rise in Soviet debt over the last few years will require the allocation of increasing amounts of hard currency to debt service in 1977-78. Debt service is expected to rise to \$3 billion this year and almost \$4 billion in 1978, compared with \$2.6 billion in 1976.
- Government-backed credits for a major share of Soviet equipment imports in 1977-78 have already been arranged. The Soviets face a growing concern, however, among some Western governments over the growth of their debt and, in the case of Italy, an absolute limitation on the amount of new credit that can be made available.

15. Perhaps the major factor underlying the need for caution in planning hard currency trade is that the USSR can no longer count on financing unexpected trade deficits by borrowing from Western commercial bankers. Although Western bankers still regard the USSR as very credit worthy, Soviet borrowing in 1975-76

brought many major US and West European banks close to their lending limits vis-a-vis the USSR. Even under current Euromarket conditions, where the highly liquid position of most Western banks has led to renewed banking competition for loans to many Communist borrowers, Moscow would find it difficult to raise large amounts of general purpose credits, particularly at rates it is willing to pay.

16. The USSR is extremely sensitive to its credit standing in the West, particularly as manifested in the interest rates it must pay for new loans. It will be difficult for the Soviet Union to continue obtaining low rates on its direct borrowing from Western banks as long as potential lenders are able to fill the remaining portion of their lending portfolios with higher yielding Soviet promissory notes (either purchased direct from Western exporters or in the secondary nonrecourse market).

17. The USSR could achieve a substantial increase in borrowing potential from the West should it be willing to pay higher interest rates and/or sanction new borrowers. Higher rates of interest would certainly attract additional funds from those banks still able to lend as would the tying of new borrowing to specific projects in a manner similar to that currently employed by Poland. Soviet sanctioning of new borrowers, such as specific foreign trade organizations or Gosbank itself, could also increase loan potential from those banks whose lending to the USSR is restricted by legal limitations. Based on past performance, however, the USSR probably would not resort to such measures unless pressed to do so.

18. Soviet borrowing potential would suffer substantially in the event of an increase in Western governmental and/or commercial demand for money. Direct borrowing from Western banks would be most affected; with major bank portfolios already unfavorably weighted in favor of the USSR, it is unlikely that Moscow would be able to compete with demands from developed Western borrowers at any interest rate Moscow could reasonably be expected to accept. The Soviets would also probably encounter a greater difficulty in marketing their medium-term promissory notes, which have taken on an increased importance in financing Soviet imports of Western capital goods.

Sources of Hard Currency, 1977-78

19. Moscow continues to give a high priority to upgrading its domestic economy through the use of Western equipment, technology, and intermediate products such as finished steel. In the face of the above uncertainties, however, the USSR will probably attempt to keep its trade deficits at levels that can be

financed without heavy reliance on commercial borrowing or gold sales from reserves. The USSR may also wish to build a hard currency surplus into its balance of payments. This would allow for the repayment of a portion of Soviet short-term debt now held by Western commercial banks, freeing borrowing capacity, which could be reused in the event of an unexpected future balance-of-payments crisis.

20. The following sections will examine the respective Soviet prospects for exports of goods and services, borrowing, and gold and arms sales to derive various paths for Soviet import growth in 1977-78 (see Table 2).

Table 2

USSR: Sources of Hard Currency¹

	Million US \$	
	1977	1978
Total	20.6-19.0	23.4-21.3
Merchandise exports	12.5-12.0	15.0-14.0
Gold sales	1.3-1.2	1.5-1.4
Medium- and long-term credits	4.0-3.5	4.0-3.5
Arms sales	2.0-1.5	2.0-1.5
Tourism and transportation, net	0.8	0.9

1. Projected.

Exports

21. Soviet exports should grow rapidly, to perhaps \$12-\$12.5 billion in 1977 and \$14-\$15 billion in 1978. These projections are based on the past correlation between Soviet exports and Western industrial production and alternative projections of the growth in industrial production in 1977-78. (For a detailed explanation of these projections and their underlying methodologies, see Appendix B.) The ranges reflect (1) alternative growth patterns in the West and (2) uncertainty about small though volatile exports to LDCs. If Western economic growth follows the boom-bust cycle implied in Chase Econometrics forecast⁴ for industrial production (8 percent growth in 1977 and a 2 percent decline in 1978), Soviet exports will be at the high end of the 1977 range and low end of the

4. The Chase Econometrics forecast is representative of other predictions made earlier in 1976, prior to the recent pause in the current economic recovery.

1978 range. More stable growth rates (5 percent in 1977 and 4 percent in 1978) would hold exports to the lower end of the 1977 range and push them to the high end of the 1978 range.

22. We assume that the USSR will be able to supply the West with the volume of exports implicit in these demand projections despite the fact that the rate of growth in the volume of oil exports is expected to fall appreciably in 1977-78. The projections imply an annual average growth rate, in value terms, of 25 percent, which is consistent with past Soviet export growth. The value of exports grew at an annual average rate of 36 percent in 1970-74 and increased an estimated 27 percent in value last year.

23. Soviet ability to increase oil deliveries to the West is constrained by a slowdown in the rate of growth of domestic oil production at a time when domestic requirements continue to rise steadily. Soviet commitments of oil to Eastern Europe, which have remained firm, limit increases in the amount of oil available for export to hard currency areas. Nonetheless export volume to the West should grow from an estimated 41 million tons in 1976 to 43-44 million tons in 1977-78. A substantial boost to oil earnings will be provided by price increases. As a result of the recent OPEC price increase, for example, the Soviets will receive a \$200-\$300 million windfall. The volume of natural gas exports, in contrast, will register large gains as deliveries to Western Europe under gas-for-pipe deals increase from 7.3 billion cubic meters in 1975 to 17 billion in 1978. Earnings from natural gas sales will also benefit from oil price increases.

24. Aggressive Soviet selling in 1976 indicates that substantial gains in earnings from the export of other commodities can also be expected. Price cutting or penetration of new markets have been noted for diamonds, timber, platinum group metals, and aluminum. The sales strategy is consistent with the reemphasis on the export of raw materials to the West acknowledged in mid-1976 by then Deputy Minister of Foreign Trade Alkhimov. Moscow has obviously realized that only boosts in raw material exports, compared with manufactured goods, can generate the large amounts of hard currency it needs for the remainder of the 1970s.

Gold Sales

25. The USSR produces more than 300 tons of gold annually and has an estimated gold reserve of more than 1,800 tons. Soviet gold sales policy will continue to be determined by the relationship between the availability and cost

of Western credit and the present and expected future price of gold. Because of the expected higher cost of Eurocurrency borrowing and possible limitations on the total amount of credit available to the USSR, Moscow will probably choose to market most, if not all, of its current production (less domestic consumption) in this period.

26. The recent resurgence in the gold market increases the likelihood of heavy sales. London gold prices rose to a recent peak of \$139 per ounce on 15 November 1976, against a low of \$104 per ounce in August. The gold market was not depressed when the IMF returned 6.25 million ounces to member countries in January, and many gold dealers are convinced of a strong gold market for most of 1977.

27. Soviet sales out of current production in 1977-78 would amount to an average of 25 tons per month in 1977 and 28 tons monthly in 1978. At average selling prices of \$125-\$135 per ounce, such sales would respectively yield \$1.2-\$1.3 billion in 1977 and \$1.4-\$1.5 billion in 1978. In addition, the USSR can be expected to continue direct sales to foreign buyers outside of the Swiss and London markets, principally in the Middle East.

Other Revenue Sources

28. Soviet arms sales for hard currency will continue to be a major source of hard currency earnings in 1977-78; revenues are estimated at \$1.5-\$2.0 billion annually. This projection is based upon known and probable future contracts. Net Soviet receipts from transportation are also expected to grow steadily, to \$625 million in 1977 and \$650 million in 1978. The USSR is expected to receive increased foreign exchange earnings from the carriage of Soviet exports and cross trade cargoes for foreign shippers, while little increase is expected in hard currency outlays for Soviet imports moving on foreign ships. Hard currency receipts from the Trans-Siberian land bridge are also expected to grow steadily. Net receipts from tourism will climb slowly, to some \$180 million in 1977 and \$220 million in 1978.

Medium- and Long-Term Credits

29. Moscow will continue to predicate a large share of its equipment and pipe imports on receiving medium- and long-term credits from Western suppliers, banks, and governments. The USSR has, in fact, lined up government-backed financing for a good portion of the \$10-\$12 billion in equipment and pipe expected to be imported in 1977-78. The unwillingness (inability in the case of Italy) of

some government lenders to continue to give carte blanche approval to new Soviet credit demands, however, may depress the level of new equipment orders (and ultimately imports) from what they otherwise would have been.

30. The Soviets will undoubtedly attempt to continue to arrange for medium- and long-term private financing for equipment imports -- via the vehicle of promissory note financing -- whenever feasible. Moreover, at least in 1977, Moscow will probably require a major medium-term general purpose syndication to consolidate upcoming debt payments. Having been out of the medium-term market for several months, the Soviets should be able to arrange for the syndication of a loan of about \$200-\$300 million. Moscow, however, may have to pay an interest rate spread above the 1.25 percent ceiling previously insisted upon. A recent Bank of America syndication of \$32 million in 5-year Soviet promissory notes, for example, carried a sliding spread of 1.38 percent-1.63 percent over LIBOR. At a minimum, Moscow probably will be required to offer a substantially higher front end fee if it sticks with its insistence on a 1.25 percent spread. Most major Western banks appear to be restricting additional general purpose lending to the USSR despite their liquid positions; a higher return would be required to elicit additional lending from these major banks or, more likely, to obtain the participation of smaller US and West European banks that have yet to lend heavily to the USSR.

31. Under current market conditions (and paying market rates), the USSR should be able to obtain \$1-\$2 billion annually from Western commercial banks largely in the form of medium-term syndications and via the discounting of promissory notes. As noted previously, however, should Western governmental and/or commercial demand for money increase as expected, Soviet borrowing potential could suffer substantially.

Hard Currency Inflows and Import Capacity

32. The USSR, by coordinating its gold sales, borrowing, and export policies, will probably attempt to keep hard currency inflows at or near the upper end of the projected ranges shown in Table 2. Accordingly, Moscow should be able to bring total hard currency inflows to at least \$19.5 billion in 1977 and \$22 billion in 1978.

33. Imports are but one of several claimants on hard currency, with actual import levels expected to be well below total hard currency inflows.

- Principal and interest payments on Soviet debt will rise to \$3 billion in 1977 and to almost \$4 billion in 1978.

- Moscow may wish to repay a portion of its existing short-term debt – currently estimated at more than \$3 billion. By doing so the Soviets would be able to both minimize their susceptibility to changes in money market conditions and free up Western commercial bank portfolios for additional medium- and long-term lending.
- The USSR may wish to build hard currency holdings in the West as a hedge against future unexpected balance-of-payment problems.
- Moscow may find itself required to provide hard currency to Poland or other East European countries in trouble.

Given estimated debt service requirements and allowing for roughly \$1.5 billion in additional annual hard currency allocations to other nonimport related areas, we estimate that the USSR will be able to increase total hard currency imports from \$14.8 billion in 1976 to \$15-\$16 billion in 1977 and \$16.5-\$17.5 billion in 1978 (see Table 3).

Table 3

USSR: Hard Currency Imports¹

	Billion US \$					
	1973	1974	1975	1976 ²	1977 ³	1978 ³
Total	6.6	8.5	14.2	14.8	15-16	16.5-17.5
Grain	1.4	0.5	2.3	3.0	1.5-2.0	1.5-2.5
Nongrain	5.1	8.0	11.9	11.8	13.0-14.5	14.0-16.0

1. Because of rounding, components may not add to the totals shown.

2. Estimated.

3. Projected ranges.

34. Even if the USSR does achieve the maximum increase in total hard currency imports in 1977-78, the rate of nominal import growth will be slower than in past years. In all likelihood, however, Moscow will be better off than in 1975-76 in terms of its ability to satisfy its requirements for Western technology, equipment, and intermediate products, such as finished steels. Two reasons underly this seeming contradiction. First, the reduction in world inflation rates and the absolute fall in the price Moscow will pay for Western grain this year will reduce the inflationary component of nominal import growth in 1977. Second, the record 1976 Soviet grain harvest will allow for a substantial reduction in grain imports in 1977, freeing hard currency for increased imports in other areas.

35. The following sections discuss individually Soviet import requirements for grain, equipment, and steel products.

Grain

36. Soviet imports of Western grain will depend, as usual, on many imponderables, including crop prospects, stock maintenance, pressures to export to client states, and world grain prices. The continued commitment to expand the livestock sector should guarantee a substantial amount of imports in any event, at least through 1980. Fulfillment of the new 5-year plan goals for livestock inventories and meat production will require feed supplies above the annual average level available during the past 5 years. Even if a good crop (more than 200 million tons) is harvested, imports will be 6-10 million tons. Under the US-Soviet grain agreement, the USSR must import at least 6 million tons of US grain each year. Moscow has already contracted for delivery of \$1.3 billion in Western grains in 1977. Less

37. Prospects for 1978 grain imports also depend on the 1977 harvest. Should 1977 grain production fall below 180 million tons, Soviet imports will probably fall in the range of 20-30 million tons. Assuming 1976 prices and an equal mix of food and feed grains, these purchases would cost \$2.7-\$4.0 billion, with most of the deliveries coming in 1978. A good Soviet harvest in 1977 might keep grain imports to 9 million tons costing \$1.3 billion.

111.0 - corn thru early NOV
107 - wheat

Equipment

38. Soviet imports of Western equipment began to level off in 1976 after growing rapidly in recent years, and should continue to grow relatively slowly through 1977. Soviet equipment imports rose from \$1.7 billion in 1973 to \$4.5 billion in 1975. Based on orders the USSR is known to have placed in the West in recent years, Moscow probably imported roughly \$5 billion in equipment in 1976 and should import somewhat less than \$6 billion worth of equipment this year. Imports of equipment may grow even more in 1978 if the rising trend of orders placed in 1976 continues.

39. The slowdown in the growth of equipment imports in 1976-77 was presaged by the slow growth of equipment orders placed in the West in 1975 (see Table 4). Known orders grew rapidly early in the decade, from \$1.6 billion in 1972 to \$4.3 billion in 1974, but rose by only \$300 million in 1975 to \$4.6 billion. Soviet equipment orders normally fall off at the end of a planning period

and this trend was, in all likelihood, reinforced by Moscow's hard currency stringencies in 1975.

Table 4

USSR: Equipment Orders and Deliveries

	Billion US \$				
	1972	1973	1974	1975	1976 ¹
Known orders placed in the West	1.6	2.2	4.3	4.6	6.0
Soviet hard currency equipment imports	1.3	1.7	2.3	4.5	5.0

1. Estimated.

40. Hard currency shortages also had some effect on the level of Soviet equipment orders placed in 1976. The reduction in hard currency allocations was widespread, affecting purchase decisions in the area of medical equipment, computers, consumer goods, production equipment, and ship construction. In addition to outright cancellation of negotiations, the USSR is known to have deferred discussions or scaled down the size of contemplated purchases. In some cases, for example, Moscow has chosen a greater blending of Soviet and foreign parts rather than the turnkey-style purchase originally contemplated.

41. Despite the fact that the USSR tightly controlled allocations for equipment purchases in 1976, the rise in Soviet orders -- to \$6 billion or more -- was not unexpected.⁵ Equipment orders normally surge in the beginning of a new 5-year plan period and the current Soviet 5-year plan has placed a high priority on the use of Western equipment and technology. Moreover, in most cases Moscow was able to secure long-term financing for its major equipment purchases. Other factors also influenced the rise in orders. Substantial orders were placed late in the year after the Soviets were assured of a bumper grain harvest thus obviating the necessity of buying large quantities of grain in 1977.

Tubular Steel

42. The USSR is expected to continue relying heavily on Western producers for the large-diameter pipe used in Soviet oil and natural gas pipelines. Soviet

5. Some \$900 million in 1976 orders were for equipment for the Orenburg gas pipeline. In this instance, the USSR was acting as agent for the six East European countries participating in the project.

construction of these lines will continue for the foreseeable future as will Moscow's inability to meet its pipe requirements from domestic sources. It is conceivable, however, that pipe imports in 1977-78 will fall below the roughly \$1.5-\$2.0 billion worth imported in 1976. Moscow has been able to secure long-term financing for past pipe imports, largely as a result of gas for pipe commodity payback deals signed with West Germany, France, Italy, and Austria. Soviet ability and/or desire to arrange for additional deals of this nature in the near future is uncertain; Moscow may be unwilling to continue to import pipe if cash payments are required.

43. Based on signed contracts, Soviet pipeline purchases will remain heavy in 1977, amounting to roughly \$1.5 billion. New orders will be required, however, if heavy purchases, particularly from Japan, are to continue in 1978.

Nontubular Steel

44. Soviet imports of nontubular steel seem to depend on general hard currency availability. The USSR suffers from a chronic shortage of finished steels, particularly rolled steel used in producing motor vehicles, equipment, and consumer durables. The nature of the Western steel market allows Moscow - depending upon Western supply availabilities - to rapidly adjust the level of its steel purchases. In late 1974, for example, Moscow was able to take advantage of Western market conditions and its own favorable hard currency situation to rapidly increase its purchases of steel. In contrast, Soviet purchases of nontubular steel apparently fell sharply in 1976, presumably as a result of hard currency stringencies. During the first 6 months, combined Soviet nontubular steel imports from Japan, France, and West Germany were down by 35 percent in value from 1975, with much of the drop resulting from a fall in quantity. Similarly, total Soviet imports from Belgium during the first three quarters of 1976, which largely consisted of steel products, were down 46 percent from 1975.

Implications

45. The picture for 1977 seems relatively clear. Soviet export prospects appear bright because of expected continued economic recovery in the West; a record grain harvest in 1976 should allow the USSR to significantly reduce agricultural imports in 1977. The USSR can be expected to run a balance-of-trade deficit on the order of \$3-\$4 billion this year, depending on actual receipts from exports, gold sales, and medium- and long-term borrowing from the West (see

Table 5). This projection allows for Soviet repayment of a portion of past short-term debt and does not depend on short-term Eurocurrency borrowing.

Table 5

USSR: Balance of Trade¹

	Billion US \$	
	1977	1978
Exports	12.5-12.0	15.0-14.0
Imports	15.0-16.0	16.5-17.5
Balance	-3.0 to -4.0	-2.5 to -3.5

1. Projected.

46. Barring a crop failure in 1977, Moscow will probably keep 1977 grain imports to less than \$1.5 billion; a poor harvest this year could boost imports to \$2 billion or more. While additional grain imports are possible, Moscow will probably opt to keep imports to a minimum in order to better satisfy nongrain import demand. A good harvest in 1977 would enable Moscow to increase nongrain imports by as much as 24 percent in value. Since known contracts do not indicate a substantial increase in Soviet equipment or tubular steel imports, the USSR will apparently have the freedom to satisfy some of the pent-up demands caused by hard currency stringencies in 1975-76. We expect to see, for example, an increase in imports of lower priority machinery and equipment and nontubular steel. Alternatively, the USSR could opt to reduce its dependence on medium- and long-term supplier's credits by paying cash instead of issuing promissory notes.

47. Projections for 1978 are far less certain. The pace of Western economic growth will have a direct bearing on Soviet exports in 1978, although export growth is expected to continue even under the boom and bust scenario outlined earlier. Soviet ability to augment hard currency receipts from exports by gold sales and/or private commercial medium- and long-term borrowing will depend, in turn, on Western market conditions. Under most foreseeable circumstances we expect the USSR by a combination of gold sales and medium- and long-term borrowing to be able to run a balance-of-trade deficit on the order of \$2.5-\$3.5 billion in 1978. The drop in the estimated size of the deficit from 1977 is largely explained by the rapid increase in debt service payments expected in 1978.

48. The likely composition of Soviet imports in 1978 is also unclear, for it will depend heavily on the size of the 1977 harvest. If the USSR has another

good crop in 1977, grain imports in 1978 could again fall to less than \$1.5 billion. Nongrain imports, in turn, could rise by roughly \$2 billion, compared with the \$1.2-\$2.7 billion rise expected for 1977. As in 1977, this increase would probably be channeled into increased imports of equipment and intermediate products.

49. A poor harvest in 1977 would cut heavily into the hard currency available for nongrain imports in 1978. Total grain imports in 1978 could rise to more than \$3 billion. As in 1975, however, Moscow would probably opt to limit grain imports by cutting livestock rations, raising flour extraction rates, and drawing down stocks (which were rebuilt following the excellent 1976 harvest). Should 1978 grain imports rise to \$2.5 billion, for example, Moscow might – depending on other factors such as export performance – be forced to reduce nongrain imports absolutely.

APPENDIX A

USSR: MEDIUM- AND LONG-TERM CREDITS

Million US \$						
	New Drawings ¹	Interest Payments	Principal Payments	Amount Available To Offset Trade Deficit	Debt at Yearend	Debt Service Ratio ² (Percent)
1973	1,690	157	657	876	3,641	17
1974	1,710	220	890	600	4,461	15
1975	4,300	276	1,280	2,744	7,481	22
1976	3,950	491	1,762	1,697	9,669	26

1. Including known medium-term syndications on the Eurocurrency market: \$750 million in 1975 and \$250 million in 1976.

2. Principal repayments on medium- and long-term debt and interest repayments on total debt as a share of merchandise exports.

APPENDIX B

SOVIET HARD CURRENCY EXPORT PROJECTIONS

Projections of Soviet hard currency exports through 1978 are based on separate estimates of exports to the developed West and less developed countries. Statistical relationships between Soviet exports and economic activity in the developed West have been established by applying regression analysis to quarterly trade and economic data of the Organization for Economic Cooperation and Development for the period from 1970 to mid-1976. By using two alternative forecasts of Western economic activity and a forecast for an aggregate Western import price index, a range of the USSR's hard currency exports to the West was developed. Soviet exports to LDCs are projected to grow at a fixed annual rate.

Estimation of Equations

The importance of various factors on Soviet hard currency exports to the developed West was tested by running regressions of these Soviet exports on several explanatory variables. Western industrial production and a time trend (historical growth in Soviet exports) were discovered to be best predictors of Soviet exports to the developed West in 1977-78. The use of real exports made it possible to separate price effects from quantity effects. Projections done in nominal terms (although yielding a higher \bar{R}^2) proved to be poorer predictors of Soviet exports in recent quarters and yielded unreasonably low projections for Soviet exports in 1977-78. The rapid rise in prices in 1973-75 had a swamping effect on the nonprice parameters of the estimated equations. Increased production, however, is expected to be a major underlying reason for the future growth in the value of Western imports from the USSR.*

The best results were obtained from regressing the logarithm of the index of Soviet real exports on a logarithm of an index of Western industrial production and on a time trend. The results follow:

* A more sophisticated approach, incorporating the supply as well as the demand side of the market for Soviet exports, would probably have produced better results than were obtained from the use of only two variables. Unfortunately, the data needed to estimate supply equations for Soviet export industries are not available to us.

$$\ln(\text{IRSXP})_t = 0.9720 \ln(\text{IINDP})_t + 0.01895 T$$

$$\bar{R}^2 = 0.8168 \text{ Durbin-Watson} = 1.6791$$

where $\ln(\text{IRSXP})_t$ = the logarithm of the index
of real Soviet exports to
the West in quarter t.

$\ln(\text{IINDP})_t$ = the logarithm of the index
of industrial production in
the West in quarter t.

T = an index of time.

The coefficients of both explanatory variables are significant at the 99 percent confidence level.

Data

Several sets of data were adjusted for use in estimating the equations. Real hard currency exports of the USSR were constructed by deflating nominal hard currency imports of 17 major OECD countries* from the Soviet Union by the IMF index of Western import prices. Deflated hard currency exports were then converted into a real import index, with the 1970 average equal to 100.

The industrial production index was computed as a weighted average of the seasonally unadjusted index of 16 major OECD countries.** The weights were the country shares of the group's 1970 gross national product.

Test for Accuracy

The accuracy of the model was tested by running the regression on quarterly data for 1970-74. The resulting regression coefficients were used to predict Soviet exports in 1975 and the first two quarters of 1976 on the basis of the actual change in the industrial production index. Table 6 demonstrates the percentage difference, by quarter, between the predicted and actual level of Soviet exports to the developed West. The quarterly differences are judged to have resulted from

* Austria, Belgium-Luxembourg, Canada, Denmark, France, Ireland, Italy, Japan, the Netherlands, Norway, Spain, Sweden, Switzerland, the United Kingdom, the United States, and West Germany.

** Denmark does not report an industrial production index.

Table 6

Deviation of Predicted Soviet Exports from Actual Exports

	Percent					
	1975				1976	
	1st Qtr	2d Qtr	3d Qtr	4th Qtr	1st Qtr	2d Qtr
<u>(Exports minus predicted exports) divided by</u> Exports	-9.9	-4.5	0.5	9.5	-2.5	5.7

the inability of the model to account for changes in Western inventories as well as from seasonal factors in Soviet exports to the West. Over the six-quarter period, however, the net difference between predicted and actual Soviet exports was \$231 million, or less than 2 percent of the total value of actual exports.

Plot

Figure 1 is a plot of an index of actual Soviet exports based on Western data and a plot of the index of such exports predicted from the final regression equation using data for 1970 to mid-1976.

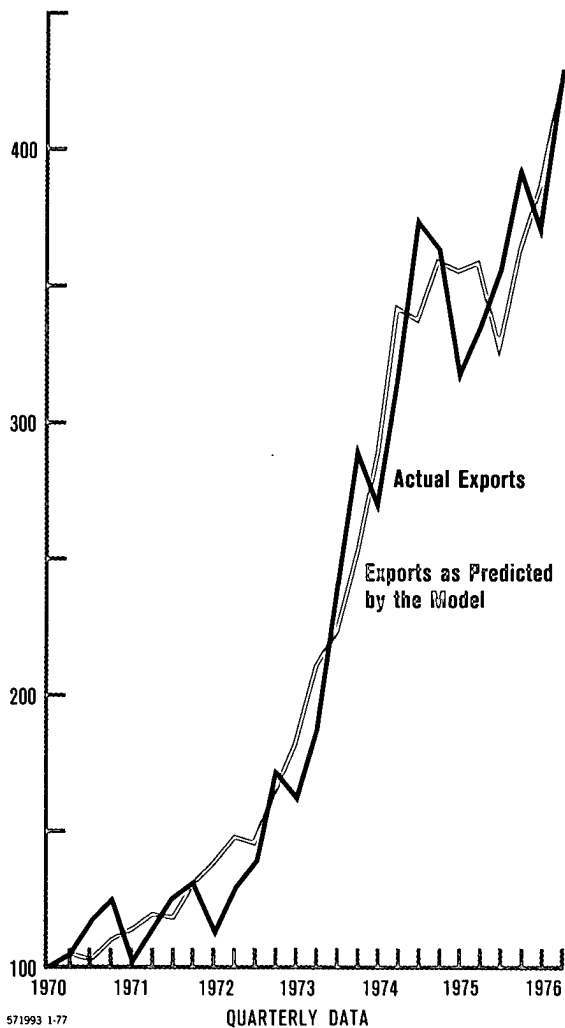
Forecasts

Two scenarios were used in Figure 2 to forecast Soviet hard currency exports to the West. Scenario I reflects Chase Econometrics forecast of a boom and bust business cycle in the West, with annual industrial production growth rates of 6.0, 8.1, and -2.2 percent for 1976-78. Our modification, Scenario II, envisions steadier growth, with rates of 6, 5, and 4 percent per year for industrial production in 1976-78. Chase's average import price change projections of 7.8, 12.8, and 9.9 percent for 1976-78 were deemed reasonable and were also used in Scenario II. Chase included a 10 percent rise in the price of crude oil on 1 January 1977 in its import price predictions.

Once projections of the exogeneous variables were made, the equation was used to compute imports of the 17 major OECD countries from the Soviet Union through the fourth quarter of 1978. To make the projections compatible with our estimates of Soviet hard currency trade with the less developed countries and with past OER reporting, a second regression equation was used to derive

Figure 1
Soviet Exports to the West

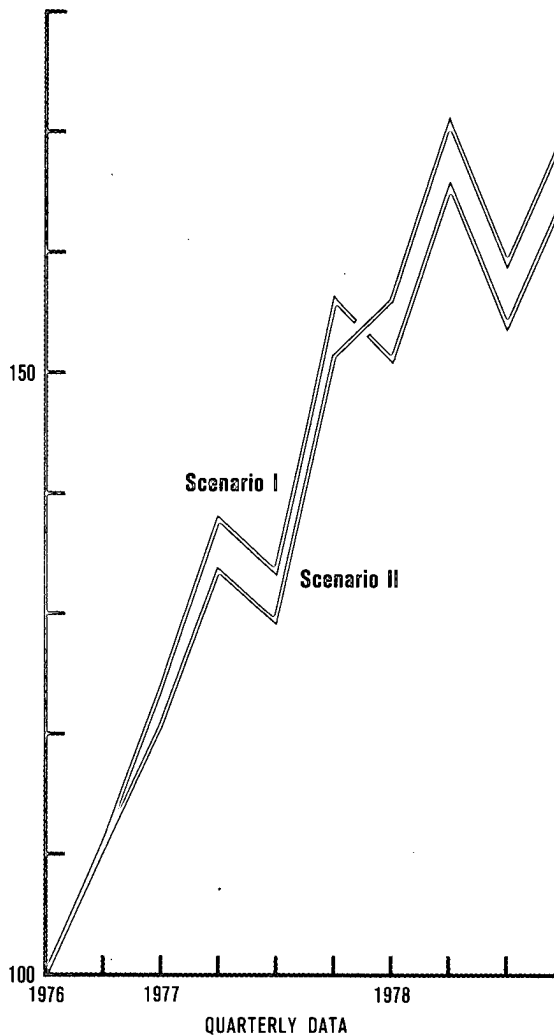
INDEX: 1970-I=100



The chart above demonstrates that fairly accurate predictions can be obtained from the model. The major variance between actual exports and those computed using the model occurred, as expected, during the first two quarters of 1975.

Figure 2
Soviet Exports to the West Under Alternative Western Growth Scenarios

INDEX: 1976-III=100



Scenario I predicts exports according to the Chase Econometrics model, which assumes annual Western industrial production growth rates of 6.0, 8.1 and -2.2 percent. Scenario II assumes more stable growth rates of 6, 5 and 4 percent.

predictions of the value of exports that will be reported by the USSR (compared with those reported by Western trade importers).

Western reporting traditionally overstates the value of Soviet exports because most Western countries report their imports from the USSR on a c.i.f. basis, while the USSR reports its exports f.o.b. Differences in the data are also caused by alternative methods of reporting, including the problem of handling reexports. The relationship between Western and Soviet trade data was determined by regressing the data against one another over a 15-year period. The results follow:

$$\text{Sovexp} = -206.557 + 0.9980 (\text{Westimp})$$

$$\bar{R}^2 = 0.99812 \quad \text{Durbin-Watson} = 1.93639$$

where Sovexp = the value of Soviet exports to the
17 developed Western countries
reported in official Soviet foreign
trade statistics, and

Westimp = the value of imports from the USSR
reported by the 17 developed
Western countries.

Separate estimates of Soviet hard currency exports to LDCs were made since they did not appear to exhibit as stable a pattern as those to the developed West. A further complication is that the product mix is greater, making reliable estimation of prices and quantities much less feasible. Soviet hard currency exports to LDCs were assumed to grow at roughly 10 percent annually. This procedure should not unduly upset the estimate of total Soviet hard currency exports, since Soviet sales to LDCs constitute about 15 percent of the total.

Figure 2 contains plots of export indexes generated by each economic growth scenario. While differences are not great, projected exports under Scenario II eventually surpass those under Scenario I because of its assumed steady growth in Western industrial production.

Sensitivity of Forecasts

Soviet real hard currency exports to the West were sensitive to changes in Western industrial production and a time trend over the sample period 1970-75.

For every 1 percent increase in the Western industrial production index, Soviet quarterly real exports rose by nearly 1 percent. The export growth rate due to the time trend accounts for 1.9 percent per quarter, or about 8 percent per year. As a result, industrial production would have to rise by 8 percent per year to match the rise in real Soviet hard currency exports due to the time trend.